AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1-8. (Cancelled)

9. (Currently Amended) A polymer composition, comprising: a photodefinable polymer including a thermally decomposable sacrificial polymer and a photoinitiator, wherein the photoinitiator ~~is selected from~~, bis(2,4,6-trimethylbenzoyl)-phenylphosphineoxide ~~and 2-benzyl-2-dimethylamino-1-(4-morpholinophenyl)-butanone-1~~.

10-13. (Cancelled)

14. (Previously Presented) A method for fabricating a structure comprising:

disposing a photodefinable polymer composition onto a surface, wherein the photodefinable polymer includes a sacrificial polymer and a photoinitiator;

disposing a gray scale photomask onto the photodefinable polymer, wherein the gray scale photomask encodes an optical density profile defining a three-dimensional structure to be formed from the photodefinable polymer;

exposing the photodefinable polymer through the gray scale photomask to optical energy;

removing portions of the photodefinable polymer composition to form the three-dimensional structure;

disposing an overcoat layer onto the three-dimensional structure; and

decomposing the photodefinable polymer composition, thermally, to form a three-dimensional air-region.

15. (Original) The method of claim 14, wherein decomposing includes:

maintaining a constant rate of decomposition as a function of time.

16. (Original) The method of claim 14, wherein decomposing includes:

maintaining a constant rate of mass loss of the photodefinable polymer.

17. (Original) The method of claim 14, wherein decomposing includes:

heating the structure according to the thermal decomposition profile expression

$$T = \frac{E_a}{R}[\ln \frac{A(l-rt)^n}{r}]^{-1}$$

where R is the universal gas constant, t is time, n is the overall order of decomposition reaction, r is the desired polymer decomposition rate, A is the Arrhenius pre-exponential factor, and E_a is the activation energy of the decomposition reaction.

18-19. (Cancelled)

20. (Original) A structure, comprising the three-dimensional air-region formed using the method of claim 14.

21. (Original) A structure, comprising the three-dimensional air-region formed using the method of claim 15.

22. (Original) A structure, comprising the three-dimensional air-region formed using the method of claim 17.

23-27. (Cancelled)